DOCUMENT RESUME

ED 179 510 SP 014 876

AUTHOR Annarino, Anthony A.
TITLE A Mastery Learning Instructional and Curriculum Model for Physical Education.
PUB DATE 77
NOTE 12p.

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Curriculum Design: Higher Education; *Individual Development: *Lifetime Sports: *Mastery Learning; *Physical Education: Psychomotor Skills; Secondary Education: Skill Development

ABSTRACT

The objectives for tailoring a physical education program to meet individual abilities are presented in this proposal for developing a curriculum using the concept of mastery learning. The primary emphasis of this program is on developing skills in sports that will be enjoyed for a lifetime. Developmental procedures for initiating the program are given in outline form as well as needed facilities and materials, instructional strategy, and the design of the curriculum. Guidelines are provided for two model programs, one for secondary school level and one for college/university programs. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED179510

U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

A MASTERY LEARNING INSTRUCTIONAL AND CURRICULUM MODEL FOR PHYSICAL EDUCATION

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Anthony A. Annarino
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Anthony A. Annarino
Professor
Department of Physical Education,
Health and Recreation Studies
Purdue University
West Lafayette, IN 47907

INTRODUCTION

One approach for insuring achievement is a Mastery Learning Strategy. Learning for mastery is not a new educational concept. Its impact upon the educational scene in the early twenties embodied the principles that levels of learning be defined in terms of specific objectives to be learned by the student; that the time variable for learning be manipulated in order to permit individual rates of learning; that students be required to achieve mastery of a designated learning objective before preceding to the next; that diagnostic feedback (formative evaluation) be provided to the student during the learning stages; and, alternative instructional correctives be used for students having difficulty in learning.

This strategy has been previously proposed by the author but has not gained wide acceptance for various reasons. Thus may be due, in part, to limited availability of instructional materials and equipment but largely due to the complacency of retaining conventional-type programs that provide security for the teacher and is reinforced by teacher-preparation programs and traditionalist teacher-educators.

SO 014 876

Another factor is the limited research evidence available (Bloom, 1968) in physical education as to the relative effectiveness of a mastery learning strategy compared to conventional strategies. However, the available results indicate not only a new and exciting approach for physical education instruction but may be a future answer to accountability in physical education.

MASTERY LEARNING MODEL FOR PHYSICAL EDUCATION

In developing a Mastery Learning Model, the following concepts were utilized:

1. A student should be permitted to progress at his own rate.
2. An opportunity should be provided to the student for broader or in-depth learning.
3. There should be maximum utilization of instructional resources and personnel.
4. Each student should be personally involved and constantly active.
5. Learning should not be restricted to a regularly scheduled class period.
6. The time for learning of a motor skill is not equal for all individuals.
7. Various levels of skill proficiency should be determined by the learner.

Application of these concepts necessitated changing traditional curriculum developmental procedures, operational environmental procedures, instructional strategies, and curriculum design. These changes were:

A. Developmental Procedures
   1. Develop psychomotor and cognitive criterion-reference competencies for every learning unit.
   2. Identify the competencies to be measured for formative and summative evaluation.
   3. Design individualized instructional materials for each of the learning units consisting of a systematic and progressive series of psychomotor tasks (closed through open), and cognitive tasks requiring written, verbal, and motor responses by the student.
   4. Select or construct psychomotor and cognitive tests for pre-entry assessment, formative evaluation, and summative evaluation.

B. Operational Environmental Procedures
   1. Modify the physical education facilities to include:
      a. Multiple indoor and outdoor skill practice areas
      b. Film viewing areas
      c. Listening areas
      d. Reading areas
      e. Testing areas
      f. Interview areas
   2. Secure the following software and hard-hardware:
      a. A sufficient amount of sports equipment
      b. Activity teaching films and slides
      c. Activity listening tapes
      d. Film and slide projectors
      e. Cassette recorders
      f. Video camera, recorder, playback unit, and monitors
      g. Charts, posters, and diagrams
      h. Reading resource materials

C. Instructional Strategy
   1. A thorough orientation as to the nature and type of program is given to all students enrolled in a class section.
   2. The student selects an activity unit (e.g. golf, tennis, etc.)
   3. Specific activity instructional and learning procedures are described by each instructor.
   4. The student may use the diagnostic psychomotor and cognitive tests or through a personal interview to determine a starting level of competency.
   5. The student achieves the prescribed psychomotor and learning tasks by using the available media, resource material, instructor assistance, and individual or group practice. The instructor is always available at the practice areas for assistance and formative evaluation.
   6. When a student completes the required minimal tasks in a lesson, the instructor formatively evaluates the student on a predetermined minimal competency level for that lesson.
   7. A student who achieves the minimal tasks proceeds to the next lesson. If the student does not achieve the instructor diagnoses the problem and provides instructional correctives. Alternatives to the original mode of instruction are used. (e.g. If the original demonstration was by a loop film, the instructor could use as alternatives a live model demonstration or a video tape replay).
   8. After a student achieves all the minimal psychomotor and cognitive competencies for the learning activity, final (summative) psychomotor and cognitive tests are administered.
   9. Psychomotor and cognitive grades for the activity are determined by the student's performance on the summative evaluation that is based on predetermined standards for mastery.
   10. The results of summative evaluations may be also used to determine whether the student may elect to achieve a higher level for the activity, select another activity or remain in the activity to achieve the minimal standard.

11. If a new activity is selected, the student is assigned to the new activity area and instructor. The same procedures as outlined are followed.

D. Curriculum Design

In designing a Mastery Model curriculum for physical education programs the following guidelines were formulated:

1. Instruction should be the primary objective with the emphasis on Lifetime Activities.
2. There should be maximum utilization of instructional staff and resources.
3. The teaching/learning environment should be structured but within the structure permit freedom of choice by the student.
4. The design should permit manipulation of the time variable for learning an activity so that a student not only regulates and controls individual rate of learning but also the amount.
5. A team teaching approach should be utilized with instructors who are highly proficient in the designated activities, individualized methodology, and the use of formative evaluation techniques.
6. Activities should be selected based upon their feasibility for co ed instruction.
7. The designs should include time modules for program orientation; activity selection; and, physical fitness testing, evaluation, and individualized fitness prescriptions.
8. The designs can be modified as to the number and type of activity of instructional personnel and resources.
9. The time modules for the aquatic option should be determined by the American Red Cross Standards.
10. A pass/fail grading system is recommended. A student earns a pass grade by completing the minimal competencies for one activity or if a grading scale is used, variable grades may be given for completion of two or more activities.
11. Cadet teachers can be assigned to other physical education classes.

These curriculum design guidelines were used to design the two models . . . A and B for a secondary program and two models - C and D for College/University programs. Modifications in the models can be made for specific situations. Alternate activities can be substituted or less options offered based upon the criteria of facilities, equipment, supplies, and teaching personnel.

MODEL A

WEEKS	OPTION 1	OPTION 2	OPTION 3	OPTION 4
2	Program Orientation, Fitness Diagnostic Testing, and Prescription			
5	Golf	Tennis	Cadet Teaching	Aquatics I
5	Archery	Badminton & Handball	Cadet Teaching	Aquatics II
5	Power Volleyball	Gymnastics	Cadet Teaching	Aquatics III
1	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation

---

2	Program Orientation, Fitness Diagnostic Testing, and Prescription			
5	Power Volleyball	Gymnastics	Cadet Teaching	Aquatics I
5	Archery	Badminton & Handball	Cadet Teaching	Aquatics II
5	Golf	Tennis	Cadet Teaching	Aquatics III
1	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation

ALTERNATE ACTIVITIES

Fencing

Angling and Casting

Dance

Bowling

Self-testing

Conditioning

AQUATIC ACTIVITIES

Swimmer levels

Advanced Life Saving

Water Safety Aide

Instructor: Basic swimming, Water Safety, handicapped

Scuba and Snorkeling

Small Craft

Synchronized swimming

MODEL B

WEEKS	OPTION 1	OPTION 2	OPTION 3	OPTION 4	OPTION 5
1	Program Orientation, Fitness Diagnostic Testing and Prescription				
8	Archery	Golf	Tennis	Cadet Teaching	Aquatics I
8	Gymnastics	Bowling	Badminton-Hand-ball	Cadet Teaching	Aquatics II
1	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation

1	Program Orientation, Fitness Diagnostic Testing and Prescription				
8	Gymnastics	Bowling	Badminton-Hand-ball	Cadet Teaching	Aquatics I
8	Archery	Golfing	Tennis	Cadet Teaching	Aquatics II
1	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation

PHYSICAL EDUCATION MASTERY LEARNING CURRICULUM
(COLLEGE AND UNIVERSITY)

DESIGN C

SEMESTER ONE

WEEKS	OPTION 1	OPTION 2	OPTION 3	OPTION 4
1	Program Orientation, Fitness Diagnostic Testing, and Prescription			
7	Archery	Golf	Tennis	Badminton
7	Handball	Bowling	Conditioning	Squash-Racketball
1	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation

SEMESTER TWO

1	Program Orientation, Fitness Diagnostic Testing, and Prescription			
7	Handball	Bowling	Conditioning	Squash-Racketball
7	Archery	Golf	Tennis	Badminton
1	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation

NOTE: Semester 1 and 2, Lab. 3, Cr. 1
Three days a week - 50 minute periods

PHYSICAL EDUCATION MASTERY LEARNING CURRICULUM
(COLLEGE AND UNIVERSITY)

DESIGN D

SEMESTER ONE

WEEKS	OPTION 1	OPTION 2	OPTION 3	OPTION 4
1	Program Orientation, Fitness Diagnostic Testing, and Prescription			
14	Archery	Golf	Tennis	Badminton
1	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation

SEMESTER TWO

1	Program Orientation, Fitness Diagnostic Testing, and Prescription			
14	Handball	Bowling	Conditioning	Squash-Racketball
1	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation	Fitness Evaluation

NOTE: Semester 1 and 2, Lab. 3. Cr. 1
Three days a week
50 minute periods

REFERENCES

AAHPER, Proficiency Testing For Physical Education, AAHPER Publications, Washington, D.C., 1974.

Annarino, A. A., "I.I.P.," Journal of Health, Physical Education, and Recreation, AAHPER Publications, Washington, D.C., October, 1973. Pps. 21-23.

Annarino, A. A., Individualized Instructional Programs: Archery, Badminton, Bowling, Golf, Tennis. Prentice-Hall, Englewood Cliffs, N.J. 1974.

Annarino, A. A., "University Basic Instructional Program," The Physical Educator, Phi Epsilon Kappa, October, 1974. Pps. 131-133.

Bloom, Benjamin S. "Learning For Mastery," UCLA-CSEIP Evaluation Comment, 1, No. 2, 1968.

Carroll, John B., "A Model of School Learning," Teachers College Record, 64, 1963. Pps. 723-733.

Frey, Karen L. "Stimulation In Curriculum Planning," Quest 1975, XXIV. Pps. 85-91.

Glaser, Robert. "Adapting the Elementary School Curriculum to Individual Performance," Proceedings: Invitational Conference on Testing Problems, Educational Testing Service, Princeton, N.J. 1967.

Morrison, H. C. The Practice of Teaching in the Secondary School, University of Chicago Press, Chicago, IL 1926.

Skinner, B. F. "The Science of Learning and the Art of Teaching," Harvard Educational Review, 24, 1954. Pps. 86-97.

Washburne, Carlaton W. "Educational Measurements as a Key to Individualizing Instructions and Promotions," Journal of Educational Research, 5, 1922. Pps. 195-206.